



Frequently Asked Questions Regarding E85 Flexible Fuel Vehicles

1. Q. What makes this truck different from a regular gasoline burning truck?

A. There is only one major additional part that is included on a FFV – the fuel sensor that detects the ethanol/gasoline ratio. A number of other parts on the FFV's fuel delivery system are modified so that they are ethanol-compatible. The fuel tank, fuel lines, fuel injectors, computer system, anti-siphon device and dashboard gauges have been modified slightly. Alcohols are corrosive. Therefore, any part that comes in contact with the fuel has been upgraded to be tolerant to alcohol. Normally, these parts include a stainless steel fuel tank and Teflon-lined fuel hoses. Auto manufacturers estimate these changes add less than \$200 to the cost of the vehicle.

2. Q. Where can I buy E85 in Kansas?

*A. Power Plus
3505 Vine St (I-70 access)
Hays, KS*

*Maize Kwik Shop
5340 N. Maize Road
Maize, KS*

*Moeder Oil Company, Inc.
2302 Rail Road Avenue
Great Bend, KS 67530*

*Bird Express
1000 Main Street
Great Bend, KS 67530*

*Frontier Equity
Kansas & RR Avenue
Brewster, KS 67732*

*Capital City Oil
4141 NW Lower Silver Lake Road
Topeka, KS*

*Petro Plus
120 S. Maple (Highway 59)
Garnett, KS*

*Bordertown II Smoke Shop
2708 South Walnut
Coffeyville, KS 67337*

*Frontier Equity Exchange
209 W Hwy 36
Bird City, KS 67731*

3. Q. What kind of mileage does the E85 truck get compared to a regular truck?

A. There is a slight decrease in mileage for a vehicle fueled on E85, but increased octane decreased environmental damage, as well as price, offset this. FFVs are not optimized to E85, so they can experience a 5 percent to 15 percent drop in fuel economy. This will vary based on temperature and driving conditions. Individuals can put this into perspective by understanding that, for vehicles fueled by regular gasoline, aggressive driving habits can result in a 20 percent loss of mileage. Low tire pressure can reduce mileage by 6 percent.

4. Q. What vehicle models are sold with the flex fuel option?

A. Daimler Chrysler, Ford, General Motors, Isuzu, Mazda, Mercedes, Mercury and Nissan all have models that run on E85. To be sure that your model can run on E85, check inside the fuel door for a decal indicating E85 may be used. If there is no decal, see if the Vehicle Identification Number matches that of a qualifying model. A list of qualifying VINs can be found at <http://www.e85fuel.com/information/vin.php>

5. Q. What happens if I accidentally fuel my gasoline powered vehicle with E85?

A. Although your vehicle was not manufactured to run on E85, no problems should occur if you mistakenly fuel once with the alternative fuel. The largest difference between an E85-powered vehicle and a gasoline-powered vehicle is computer modules meant to read different amounts of oxygen within the fuel. E85 contains a higher amount of oxygen than gasoline and E85-compatible vehicles are made to read that higher amount. When a higher amount of oxygen is read by a gasoline-powered vehicle, your "check engine light" may appear. Therefore, a one-time use of E85 will not hurt your engine, but long term use could damage your vehicle.

6. Q. Can I put gasoline or E10 in a flex fuel vehicle?

A. The FFV system allows the driver to use any combination of gasoline or ethanol - from 100 percent unleaded gasoline to 85 percent ethanol. A driver can always use unleaded gasoline if ethanol is not available.

7. Q. Why does the E85 truck get lower mileage than a regular pickup truck, but ethanol has a higher octane rating than gasoline?

A. Ethanol has less energy content than gasoline, so there will be a slight dip in fuel efficiency. However, ethanol is a high quality, high-octane fuel capable of reducing air pollution and improving automobile performance. Because ethanol is the highest-octane fuel on the market, it helps your car run more smoothly. It also keeps your fuel system clean for optimal performance because ethanol won't leave gummy deposits. And because ethanol burns cleaner, it produces fewer emissions.

8. Q. Can I convert my vehicle to run off of E85?

A. Is it possible to convert a vehicle that was designed for gasoline to operate on E85? Yes. However, there are no conversion or aftermarket parts that have been certified by the EPA as meeting the standards to maintain clean exhaust emissions. Technically speaking, converting a vehicle that was designed to operate on unleaded gasoline only into one designed to operate on another form of fuel is a violation of the federal law and the offender may be subject to significant penalties. No aftermarket conversion company has taken the initiative to certify an E85 kit that would allow a gasoline vehicle to operate on 85 percent ethanol.

9. Q. How can you assure consumers that the ethanol, when it evaporates, will not contain water?

A. All modern automotive fuel systems are closed and cannot attract moisture. The most likely cause for water in gasoline today is from service station storage tanks, which is a rare problem. The Kansas Department of Agriculture's weights and measures program performs inspections and tests to ensure fuel quantity and quality, including water in fuel, at stations across the state. Ethanol can help absorb moisture in a fuel system and carry it out in suspension as it is consumed, preventing frozen fuel lines in the winter.

10. Q. Why are there different varieties of ethanol for light duty vehicles (E85) and heavy duty vehicles (E95)? Why can't E95 just replace E85?

A. E85 (a blend of 85 percent fuel ethanol and 15 percent gasoline) is used in spark ignition engines (i.e. gasoline engines). The gasoline is added to provide good cold start and warm up performance due to ethanol's low volatility, which results in more difficulty vaporizing at cold starts. E95 (a blend of 95 percent fuel ethanol and 5 percent gasoline) is used in compression ignition engines (i.e. diesel engines). The addition of gasoline above five percent in diesel applications lowers the flash point to unacceptable levels. Consequently, E85 cannot be used in diesel applications, so E85 and E95 are not interchangeable because of the two different types of engines.

11. Q. How much ethanol needs to be purchased to receive a tax credit?

A. A tax credit in an amount not to exceed the lesser of \$750 or five percent of the cost of an FFV is allowed to a taxpayer who purchases an original equipment manufacturer (OEM) FFV. This credit is only for the first individual who takes title of the vehicle. For motor vehicles capable of operating on an E85 blend, this credit is allowed for taxable years after Dec. 31, 1999. The individual claiming the credit must provide evidence of purchasing at least 500 gallons of E85 between the time the vehicle was purchased and December 31 of the next calendar year.

12.Q. Can you put ethanol (E10 or E85) into lawn mowers and ATV's (4-wheelers)?

A. Gasoline-ethanol blends containing up to 10 percent volume ethanol may be used in any vehicle. The addition of ethanol boosts octane and, because it is an oxygenate, it contributes to a more complete fuel combustion resulting in reduced emissions of carbon monoxide and other ozone-forming emissions. Engines that have been converted to allow for alternative fuels (E85) are the only ones that may allow a gasoline-ethanol blend higher than 10 percent.

13.Q. Does it take more energy to produce a gallon of ethanol than the energy we get out of it?

A. The energy balance of ethanol, according to the most recent USDA and Department of Energy studies, is between 1 to 1.35 and 1 to 1.67. That means it produces energy in excess of the energy used in production. Continued efficiencies in agriculture and ethanol processing have been steadily improving that positive net energy ratio. It is good to remember that energy is used to harvest other forms of energy, such as oil, too. In fact, gasoline has an energy ratio of 0.805. In other words, for every unit of energy dedicated to the production of gasoline there is a 19.5 percent energy loss. In summary, the finished liquid fuel energy yield for fossil fuel dedicated to the production of ethanol is 1.34 but only 0.74 for gasoline. In other words the energy yield of ethanol is $(1.34/0.74)$ or 81 percent greater than the comparable yield for gasoline. Read a recent USDA study at <http://www.ethanol-gec.org/net-bal-corn-eth-2001.pdf>.